

Opinion delivered March 19, 1951.

1. DAMAGES.—In a proceeding by appellee to recover damages to its pipe line caused by the construction of a lake the measure of damages is the increased cost to appellant of maintaining its line by the construction of the lake.
2. DAMAGES.—The testimony showing that there will be breaks in the coating of the pipe on that portion of the line which will be under water and that leaks will have to be repaired is sufficient to justify a recovery of \$15,000 damages.

Appeal from Faulkner Chancery Court; *J. B. Ward*, Chancellor; reversed.

Armistead, Rector & Armistead, for appellant.

E. E. Ashbaugh and *Clark & Clark*, for appellee.

PAUL WARD, J. The appellee, Arkansas State Game and Fish Commission, filed a condemnation suit against the appellant and others seeking to condemn an easement over and across several thousand acres of land in Faulkner County for the purpose of constructing a lake near Conway.

The appellant, Magnolia Pipe Line Company, is the owner and operator of a twenty-inch interstate crude oil pipe line running from a point in Texas to a point in Illinois, which line crosses the area involved. This line was constructed before this suit was filed.

Appellant challenged unsuccessfully the right of appellee to condemn and an appeal was taken from the decision of the Chancery Court to this court, where it was affirmed on May 2, 1949, in the case of *W. R. Wrape Stave Co. v. Ark. State Game and Fish Com.*, 215 Ark. 229, 219 S. W. 2d 948. It then became the duty of the Chancery Court to try the issues framed by the complaint and answer for the purpose of assessing such damages as the defendant might sustain from the construction of the contemplated lake. Appellant waived any rights it had to a trial by a jury and the parties agreed to a trial before the Chancellor.

From the Chancellor's findings of fact we quote the following: "A jury was waived by the parties and this issue was submitted to the court on the 19th of July, 1949. Testimony was taken before the court by Boyd Keathley, court reporter, and by him transcribed and has been filed as depositions in this cause."

Appellee in its brief sets out what it contends is a quotation from the judge's docket: "On this the 19th day of July, 1949, comes on for hearing the matter of assessing damages to the Magnolia Pipe Line Company for property taken or damaged by the plaintiff. The said defendant, Magnolia Pipe Line Company, expressly waives any right it may have to trial by jury and agrees to submit all questions of damage to the court sitting as a jury."

In the light of the above appellee contends that this court should not disturb the finding of the lower court if there is any substantial evidence to support it the same as if the case were tried by jury. But we are not in agreement with this contention. In the first place, if appellant had wanted the issue tried by a jury his remedy would have been to move to transfer the cause to the Circuit Court. Moreover, we do not hold that appellant would be bound by a finding of fact made by the court as quoted above nor by any notation that the court made on its docket as in neither instance was it signed by appellant. The matter will be tried *de novo* by this court.

The lower court gave appellant judgment in the amount of \$10,000 from which comes this appeal.

It is not denied that appellant is entitled to some damages and the question for us to decide is whether the weight of the evidence supports the finding of the lower court and if not then how much damage is the appellant entitled to receive. The learned Chancellor made special findings of fact on which he based the allowance or disallowance of damages and we think it would help to clarify the issues here to quote or paraphrase some of those findings, and also some of the findings which were requested by appellant and were disallowed by the Chancellor.

Appellant's request No. 1 is as follows: To "find that this defendant would be damaged by the construction of the proposed dam and lake to the extent that the cost of affording cathodic protection to its pipe line is increased by reason of the flooding of its right of way by the proposed construction, and to fix the amount of such damage in such sum as the evidence shows such cost will be increased." In refusing the above requested finding the court said that the evidence was mostly opinion and was too general in its nature for the court to determine with any degree of certainty to what extent if any such protection would prolong the usable life of the pipe line; that the reason for the proposed erection of cathodic protection is the fact that the sewage from the City of Conway flows through the creek and that the corrosive elements of the water would be more likely to cause a break in the pipe wrapping exposing metal to these elements or incident acid content by reason of this sewer disposal; that this protection would be of no value so long as the pipe wrappings remained intact; that appellant used strict precaution to protect its line at this point and that this treatment would be of no value so long as the pipe wrapping remained intact. But that if the sewerage is diverted it would no longer be a dangerous element. That there is no justification for a finding that there would be any more necessity for additional cathodic protection after the lake is built than presently exists in the water-logged area in which the company elected to lay its pipe line. Also that the value of such protection is still in its embryonic stage.

Appellant's request No. 4 asked the court to find that its damage would be the cost of relocating and replacing 6.18 miles of its line and that the cost would be \$297,507.59. In response the court found that the building of the lake would not make it necessary for the pipe line company to relocate its line for the distance mentioned above.

Appellant's request No. 3 defines perhaps the most important issue we are to consider and we set it out in full: "That by the construction of the proposed dam and

lake, such defendant's right to access to its right of way covered by the water of the lake for purpose of maintaining, repairing, conditioning and operating its pipe line will be destroyed or greatly impaired and its measure for such destruction or impairment is the difference in the cost of maintaining, repairing, operating and conditioning such line over and above what the cost would have been if the lake is not constructed, and to fix its damages in whatever amount the testimony justifies." In response to the above the court found appellant to be damaged to the amount of \$10,000. We find that we are not wholly in accord with the conclusion reached by the trial court and in testing this conclusion it is necessary to abstract the testimony at some length.

Abstract of Appellant's Testimony

A. G. Pressly states he is an engineer, employed by appellant and has been for 24 years; he would not know how much more of the line would be under the water level after the lake is built, but it would be considerable; observation of the drainage basin is confined to the years beginning with 1946 and 1947. They were pretty dry years. The line was laid in July and August, 1947, a very dry part of the year.

J. E. McGeath has been employed by appellant for 25 years; the last 3 years has been assistant general superintendent: is sure building the lake over the line will damage it; thinks the best thing for appellant to do is to relocate that portion of its line. The line going across Stone Dam Creek was encased because it was discovered that some sewage was coming down into the creek. It would cost \$297,507.59 to relay the line. In the event the lake is built over the line he would expect leaks in that area to begin to show up within 3 years. You can protect the line to some extent by cathodic protection and in that case he would not expect leaks for 10 years. The normal life of the line as now laid is about 30 years. Even with cathodic protection we would expect about 2 breaks or leaks a year. Over a period of 20 years we would expect 40 leaks. If the water is not over the line it would cost about \$500 to

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repair each leak, otherwise it would cost \$2,000 to \$2,500 each; if the water was over the line in order to repair we would have to build a coffer dam. Could wait until the water receded to make the repair, but would not know how long you would have to wait. To build a coffer dam would take about 2 days and the gross income from the pipe line is \$30,000 a day, during which time the line would be out of use. There is a difference between casing a line and wrapping and coating a line. All of the line to this area has been wrapped and coated. If the wrapping and coating hold you will not have any leaks; leaks are what make the line corrode. Under normal conditions would expect to recondition the line in 20 to 25 years, which would extend the life seventy-five per cent. This pipe would have been cased if it had run through the lake as it was built. Planning to establish about 30 cathodic treating plants along the line of 650 miles or an average of 1 in every 20 miles. Normally would expect to recondition every 20 to 25 years, but if the line is under water would have to recondition in 20 years. Normally would expect 5 or maybe 15 or 20 years more life. Replacing costs more than reconditioning. There has been no recent soil or water analysis made at this place that he knows of; plan to use cathodic protection where the line crosses Stone Dam Creek, regardless of whether the lake is built or not. Thinks alternate wetting and drying of the soil traversed by a pipe line would set up soil stresses and if the protective covering is broken thereby the pipe line is rendered subject to corrosion. All of the pipe through this area is double wrapped and 114 feet where the pipe line crosses Stone Dam Creek is encased. It is double wrapped with fiberglass and felt; normally would expect leaks in 10 years and after that time 10 or 15 breaks per year for each 100 miles.

D. H. Levy is 56 years of age, and has a Bachelor of Science Degree in Electrical Engineering from Texas A. and M.; been employed by appellant for 22 years and is General Superintendent of Telegraph Telephone and Electrical and Corrosion Department. Cathodic protec-

tion of a pipe line consists in reversing the natural current that flows from a pipe line into the earth. It is recognized by industry as the best known way of protecting a steel pipe line against corrosion. If there were no breaks in the coating there would be no corrosion. Plans to make 30 such installations on the whole line; already made two. If the lake is built plan two more cathodic installations. If the lake is built the sewerage would be dispersed with the acid content throughout the basin and would cause an increased rate of decay of vegetable matter with constant increase of acid conditions, would cost \$21,000 to install a cathodic protection unit and it would cost \$42,000 to install two more; agrees with Mr. McGeath that he would relocate the line with cathodic protection and after 10 years would have perhaps two leaks per mile per year. Has made no tests to determine what electrical currents are passing through the pipe line now. Glass and asbestos will stay there and hopes the coal tar will stay there; this is the best wrapping known. In all bottom lands this line was wrapped in fiberglass plus asbestos. Have not made any soil tests or analyses in this area; don't figure they are worth a "tinker's dam", spent \$100,000 making soil tests on a 60-mile line several years ago. At two of the creeks where there was no sewage the pipes were not cased; under normal conditions that ought not to give any more trouble than the rest of the system. The water that goes through those creeks is natural water, it will run off, here today and gone tomorrow. Assuming that there will be two feet of evaporation a year every five years you will have double the saline content for the water, and in five years you would have evaporated the whole thing. Also you are submerging 6,000 acres of grass, weeds and trees and brush and these acids would have a tendency to form in the basin, but admits 60 inches of rain a year would dilute the water, but the sediment is going to stay in the lake. If the lake has a spillway that would have a tendency to dilute.

"Q. Wouldn't that be beneficial to the pipe by diluting the solution? A. Dilution would be, but the best

thing is to remove the water from the pipe line. The process of evaporation, continuing over a period of years will cause salinity to increase. By salinity is meant the salt content, that is any of the salts; it will cost practically the same to recondition as to lay a new pipe line."

C. I. Sims is a Corrosion Engineer, graduated from Texas School of Mines; has never been employed by appellant. Agrees that there should be three cathodic units, one at each creek crossing, and in that event leaks would be expected within 10 years if not under water, but if under water within three years. Leaks from faulty construction and faulty welds usually appear within a month after the line is laid. If lake is built and there is no cathodic protection, expect leaks in three months, but if lake is not built, leaks in five to 10 years.

"Q. Will that wrapping pull off of the pipe by the alternate wetting and drying? A. It has been known to. However, I think your greatest damage is done from contraction and expansion of your pipe. Between the two different extreme seasons, that is winter and summer."

Thinks the normal life of the line across Palarm Creek Bottom, that is the three creek bottoms, would be slightly under 30 years, and that the life would be reduced 50 to 60 per cent in the event the lake is built, and no cathodic protection. With cathodic protection, it would be reduced 20 to 25 per cent, even if the sewage were diverted there would be enough corrosive agent in the water to reduce the life of the line 20 or 25 per cent. If sewage has been deposited over a portion of an area for a period of 30 years I think the soil would become impregnated, especially near the creek, 100 feet on each side.

Abstract of Appellee's Testimony

C. E. Corder lives in Little Rock, employed by the Van Trump Testing Laboratory. Attended N. Little Rock High School and Layne Tech. in Chicago. Had 17 years laboratory experience as a chemist. Recently made

some soil and water tests in the area of Stone Dam Creek where the Magnolia Pipe Line crosses. Dug five holes in the soil in that vicinity. Hole No. 1 was near the pipe line and dug approximately 30 inches. Water started pouring in at a depth of 10 inches; the PH value was 4.6. PH is the measure of acidity. Three hundred feet south dug Hole No. 2, 20 inches deep and water poured in at 12 inches; PH value 4.4; 700 feet south of test hole No. 1 dug Hole No. 3, 30 inches deep, water poured in at 16 inches below the ground; PH value 4.6; came back to Stone Dam Creek for test No. 4 and dug it approximately 75 feet south of the center line of the creek, approximately 30 inches deep and water poured in at 12 inches below ground level. Test No. 5 was made 75 feet north of center line of creek, dug approximately 30 inches; this hole did not show free water pouring into it. Thinks the acid concentration will be diluted in the event the lake was filled, and the area continually submerged. There would be less acid with the other water on top and thinks it would be less harmful to things that might be submerged in the water.

“Q. 4.4 PH—how acid is that with reference to neutral 7? A. That is rather strongly acid, comparatively.”

If the sewage was stopped from flowing into Stone Dam Creek considering there is a 7,000-acre lake it would not be noticeable anyway.

Col. John Buxton lives in Little Rock, is a Civil Engineer, graduate from Missouri State at Cape Girardeau; has had about 30 years general practice. Was with Arkansas State Highway Department about four years. Experience limited to construction, maintenance and operation of the natural gas distribution system at Camp Robinson and similar work as Post Engineer at Amarillo Army Air Field in Texas and at Camp Barker at Abilene, Texas. In the latter camps had charge of the maintenance of all under ground distribution systems. Put in nearly 100,000 feet of pipe at Camp Robinson in November and December, 1940. Found that none of the pipe had been protected and none of it had corroded to a

point of failure, when it was removed. Has made a personal inspection of the Stone Dam Creek area and does not think electrolysis would have any effect upon the pipe line unless there were breaks in the covering. "If the pipe covering should happen not to have any failures, the electrolysis would be practically non existent. That is, of course, a hoped-for extreme which is hardly ever reached." Has read a report by McCullum & Peters, and based on this report I would say that after moisture content passes 40 per cent there is no increase in the corrosion factor. His experience with a pipe line is that more leaks occur in spring and fall as a result of expansions and contractions due to temperature changes. Other causes would be faulty work and faulty welding at joints; the other cause of leaks of course is corrosion. If the pipe line is covered by water temperature changes would be more uniform and less rapid, does not think there would be any material difference in the life of the pipe line in the Stone Dam Creek area as between present conditions and conditions created by building a lake over the line. If the tests mentioned before showed a moisture content of 24 per cent he does not understand this but thinks that if free water ran into the hole the whole thing would be saturated. Thinks perhaps the samples were tested after they were carried to Little Rock.

Joe Burlingame lives in Little Rock, is an engineer for the Game and Fish Commission. Went to Centenary College at Shreveport and had two years at the University of Arkansas. Was in the oil business for 10 years and was with the State Department of Public Utilities for four years as an appraisal and depreciation engineer on gas and water properties, in which time he had occasion to inspect gas pipe lines. Spent 10 years in east Texas oil fields as pipe line superintendent for two small companies. Duties were to construct and maintain oil and gas pipe lines, crude oil gathering systems. Even though the line is wrapped with fibre glass and a composition of other materials, there would still be damage to the line by corrosion if there was a "void" or "holi-

day". Says the wrapping which was used on the line is good as could be obtained and that it is the last word.

"Q. From your experience how many years would you say this wrapping would last in an area such as Stone Dam Creek? A. I wouldn't hazard a guess. I don't see how any man can pick out a particular spot or pipe line and say that it is going to leak in five or 12 years or any number of years. Q. Anything that any man would say about it would be purely guesswork? A. Entirely guesswork, and the damage to be sustained is guesswork."

A break in the coating would cause corrosion and corrosion would cause leaks and therefore damage to the pipe line. There would be no point in putting cathodic protection along this line unless it was first determined that there was an electrolysis present and that can be determined with instruments. He does not think the construction of a lake would increase the corrosiveness of the area. Thinks the alternate wetting and drying of the soil in the Stone Dam area will be more damaging to the pipe line than if it was completely submerged at all times. It is his opinion that the additional water from the lake would be beneficial to that part of the pipe line in the area of Stone Dam Creek. Thinks changes in temperature have something to do with the cracking and breaking of the wrapping on the pipe; it is theoretically true. If the pipe is all under water the temperature changes would be more uniform and there would not be so much variation in temperature changes. Doesn't think the temperature would have much to do with the breaking of the wrappings, as the pipe is laid below the frost line and if the line is covered with water there would be less variation in temperature. Does not think the decaying timber in the lake the size contemplated would cause greater corrosion on the pipe as there is much rainfall in this area. There are a number of fresh water streams emptying into the basin and water will be flowing through the lake at all times except probably 50 days in extreme dry season of August and September. Thinks that when the lake is built water will only be lost by

evaporation and leaving the timber in the lake will minimize evaporation.

Edgar Parker is the mayor of Conway, city has been discussing an expansion of the sewage facilities, but is waiting to see if the lake is built.

Walter Dunaway has lived in Conway all his life and is not an engineer; thinks the lake will be 300 feet wide where it crosses Caney Creek; 1,700 feet wide where it crosses Stone Dam Creek; and 1,100 feet wide where it crosses Gold Creek; that he measured Stone Dam Creek crossing with the County Surveyor. Based on 20 years observation thinks much of this land would be under water a minimum of 45 days a year and a maximum of 100 days; it is low land.

STIPULATIONS. The records of the United States Engineers' office at Little Rock for years 1927 to 1945 inclusive show the number of days a year the water in this region stood above the 260 contour level; it averaged 34.7 days each year.

A report of rainfall at Conway for the months of January through June, 1949, shows 30.24 inches and the normal is 26.94 inches.

Appellee, through its attorney, agreed that in the event of the necessity of repairs in the pipe line where it is covered by the law, it would lower the lake level and open its gates at the dam.

Appellant's brief shows a detailed cost analysis of 6,400 feet of pipe covered by the lake to be \$60,343.54.

In the beginning frankness compels the admission that it is impossible to fix any stated amount as appellant's damages with complete assurance it would be correct. From the very nature of the case many elements of proposed damages are to a large degree speculative. For instance, no one, even an expert, can tell what labor and material costs will be in the future, nor can he tell how long it will be before a break in the pipe line will occur or how many will occur in future years. We agree with the Chancellor that the proposed erection of two

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extra cathodic plants is properly excluded as a basis of determining damages. It appears to us that the most reasonable basis upon which to estimate the damages which the building of the lake has caused appellant is the difference in the cost to maintain its line if the lake had not been built and the cost of maintenance because it has been built. As stated before, it is conceded that appellant has been damaged in some amount.

From the nature of this case the testimony all relates to damages which the appellant expects to suffer in the future as a result of the building of the proposed lake, and since this is true much, if not all, of the testimony is in the nature of opinions. Two things, however, stand out with some clarity. One is, there will be during the life of the pipe line breaks in the coating of that portion of the line which will be covered by water and leaks will occur which will have to be repaired; and the other is, it will cost more money to make such repairs with the line under water than it would cost to make same repairs if the line were not under water. Considering these facts along with all the other facts and circumstances mentioned in the testimony we have come to the conclusion that the learned Chancellor should have awarded the appellant the sum of \$15,000 for its damages.

The cause is reversed with directions to the lower court to enter judgment in accordance with this opinion.

GRIFFIN SMITH, Chief Justice, dissenting in part and concurring in part. I agree that the additional item of \$5,000 allowed by this Court is not unreasonable, but do not believe it is possible at this time to determine how much damage will result from the causes complained of. The case is unusual in that Magnolia—a public utility with the right of condemnation—finds itself within the borderline of condemnation in that its pipelines have been covered with water. A preponderance of appellant's evidence shows tremendous damage, or extraordinary cost to partially protect against corrosion. Result of the litigation is that the Commission's rights have been superimposed upon pipeline rights in circumstances where each is entitled to operate geographically, and each occupies

the same area for different purposes—objectives not necessarily inconsistent. A practical solution would be to remand with directions to retain jurisdiction until sufficient time had elapsed to permit actual proof of deterioration and attending loss.
